Ohio Environmental Protection Agency

OHIO ENVIRONMENTAL PROTECTION AGENCY (OHIO EPA)

DIVISION OF ENVIRONMENTAL RESPONSE AND REVITALIZATION (DERR)

SITE INSPECTION WORK PLAN APPROVAL FORM

for

FORMER PURITAN LAUNDRY

Tuscarawas County

U.S. EPA ID OHN000506120

Ohio EPA Project ID 479001337006

Prepared by:	Kevin O'Hara Kevin O'Hara, Geologist 3 Southeast District Office	7-14-16 Date
Prepared or Reviewed by:	Bill Batin Bill Batin, SIFU Project Coordinator Site Investigation Field Unit	7-14-16 Date
Reviewed by:	Kristy Hunt Kristy Hunt, Environmental Manager Southeast District Office	7-14-16 Date
Reviewed by:	Christine Osborne Christine Osborne, Environmental Supervisor Site Investigation Field Unit	7/14/16 Date
Approved by:	Erica Aulet for DB David Brauner, NPL Coordinator USEPA Region 5	7/12/2016 Date

Template revised: October 2, 2015

OHIO EPA DIVISION OF ENVIRONMENTAL RESPONSE AND REVITALIZATION
SITE INSPECTION WORK PLAN
for
FORMER PURITAN LAUNDRY

SECTION I - Statement of Purpose

The Ohio Environmental Protection Agency (OEPA), Division of Environmental Response and Revitalization (DERR) entered into a cooperative agreement with the United States Environmental Protection Agency (U.S. EPA) Region V to conduct a Site Inspection of the Former Puritan Laundry located in Tuscarawas County, Ohio. The purpose of this Site Inspection is to determine whether an on-site source of PCE leaching to ground water exists on the Puritan site. The Site Inspection will also evaluate current conditions/concentrations within the PCE contaminant plume that originates at the site and migrates approximately 1,800 feet to the New Philadelphia wellfield, where contamination is being pumped into drinking water production wells. Data collected will be used to demonstrate whether the site is of National Priority List (NPL) caliber by documenting observed releases, observed contamination and potential targets.

SECTION II - General Site and Project Information

Site Name: Former Puritan Laundry	**Date(s) of Investigations: July 18-22, 2016**
DERR I.D. No.: 479001337006	**U.S. EPA I.D. No.:** OHN000506120
District: Southeast District	**County:** Tuscarawas County
Site Address/Location: 243 6th Street SW, New Philadelphia, OH	
Directions to Site: From Columbus, OH, follow I-70 E approx. 72 miles to I-77. Take I-77 N approx. 37 miles to exit 81. Turn right off exit onto W. High Ave/OH-39. Follow W. High approx. 1 mile, then turn right onto 6th Street SW. Follow 6th Street SW for approx. ¼ mile to a dead end into Bank Lane SW. The property is located directly south across the intersection with Bank Lane.	
Latitude: 40.488 N	**Longitude:** 81.457 W
USGS 7.5 Minute Series Quadrangle: New Philadelphia	
Access Permitted By: Puritan Property: Hicks Realty Tusco Property: Hicks Realty Gradall Property: Michael Haberton City right-of-way:	**Phone:**
OUPS Utility Clearance Number: TBD	**Date:**
List of Map(s) Attached: Figure 1. Site Location Map; Figure 2. Current Site Conditions; Figure 3. Proposed On-Site Sample Locations; Figure 4. Proposed Off-Site Sample Locations	

List of Other Attachments: Attachment A – Figure showing Historical Data and Estimated Extent of PCE Plume; Attachment B – 1946 Sanborn Map, Attachment C – Health and Safety Plan

SECTION III - Team Member Roles and Responsibilities

Name and District Office:	Role:	Responsibilities:
Kevin O'Hara SEDO	District Geologist/Acting Site Coordinator	Manages the programmatic and sampling aspects of the project. Arrange property access; approve in-field sampling locations; review and approve deliverables; serve as the liaison between the public and the Ohio EPA. Will assist in sampling support activities.
Bill Batin GFO	SIFU Coordinator	Communicate with the district site coordinator, SIFU staff and SIFU supervisor regarding the project details to help ensure consistency with DERR site assessment guidance and procedures; help develop work plan and HASP; prepare a cost estimate; obtain utility clearance; assist with scheduling, access and other tasks when requested by district site coordinator; review project deliverables developed by SIFU. Will organize and implement all details of the work plan and HASP. Will manage samples for submission to CLP.
Bill Batin GFO	SIFU Project Leader and Health and Safety Officer	Communicate with the site coordinator and SIFU staff regarding the project details and schedule; implement the work plan and HASP; schedule project activities; review project data; prepare and transmit deliverables.
Jeff Wander GFO	Sampling Team Member	Assist with installation of Geoprobe® borings; assist with collection of Geoprobe® soil and ground water samples.
Karl Reinbold	Geoprobe® Operator	Install borings for soil and ground water sample collection. Assist with collection of Geoprobe® soil and ground water samples.

SECTION IV - Site Description – Current Use and Condition

The former Puritan Laundry closed in 1985 after a fire destroyed the facility. The building used for laundry and dry cleaning operations was then demolished and the property has been idle since 1985. The only building that remains is a vacant garage to which three unused car wash bays are attached. The 2.4-acre property is currently owned by M. Ellen Hicks, Trustee through a Revocable Trust, and Susan Herriott, Co-Trustee. The property is located at the corner of Bank Lane SW and Mill Avenue. It is bounded on the north by a residential neighborhood, on the south by an active rail line, on the east by a mostly undeveloped lot which contains one commercial business, and on the west by a mostly undeveloped lot which contains a single Quonset-style building, current use unknown.

SECTION V - Site History - Former Operations/Regulatory Concerns

The Puritan Laundry and Dry Cleaning Company operated from the early 1900s to 1985. On August 30, 1985, a fire destroyed the Puritan Laundry building and its contents. According to an August 1987 U.S. EPA Potentially Responsible Party Search Report (Jacobs Engineering Group, Inc.) completed for the New Philadelphia Well Field Site, the president of Puritan, William Hicks (deceased former owner and operator), stated that the facility used approximately 50 gallons of tetrachloroethylene (PCE) annually from 1975 to 1985. The company received the solvent in cartridges from M&L Company in Akron, Ohio and from Ashland Refinery. Prior to using PCE, Puritan Laundry used Stoddard solvent (mineral spirits) which was delivered in tanker trucks and pumped into drums for use on-site.

SECTION VI - Previous Site Work

Since the initial detection of PCE in the New Philadelphia drinking water supply over 30 years ago, various site investigations have been conducted by State and local authorities to identify the source(s) of contamination to the well field. A summary of these activities is provided below.

1981
In 1981, the city of New Philadelphia well field began detecting VOCs in its productions wells. The primary contaminant was trichloroethylene (TCE), but additional compounds included 1,1,1-trichloroethane (1,1,1-TCA); 1,1-dichloroethene (1,1,-DCE); cis- and trans- 1,2-dichloroethylene (1,2-DCE); and PCE.

1984
An investigation was conducted to attempt to locate the source of ground water contamination not associated with Joy Technologies, which is the source of a distinctly separate plume composed primarily of TCE, that enters the wellfield from the north.

As part of the investigation, 14 test pits were installed at the Gradall manufacturing facility, located to the west of the well field and southeast of the Puritan site. The test pits were installed by Gradall at the request of Ohio EPA, and were excavated to a depth of 1 to 2 feet below the water table. Analysis of water samples collected from the bottom of the excavations indicated detections of TCA, 1,1-Dichloroethane (DCA), trans 1,2-DCE, TCE and vinyl chloride. The summary and conclusions from the 1984 report indicated that the western contaminant plume of PCE was migrating through the Gradall property from an up-gradient source, and, under the influence of the ground water gradients produced by the wellfield, the contaminant plume was impacting the New Philadelphia municipal wells southeast of the Gradall facility.

1985
At the request of Ohio EPA, Gradall installed three monitoring wells at their facility. The ground water sampling showed that MW-1, located up-gradient of the manufacturing facility and on the western corner of the property, was contaminated with a variety of VOCs. MW-2, located to the southeast and down-gradient of the property, had low levels of VOCs similar to those detected in the city well field. MW-3, located to the east of the facility along the eastern edge of the property, did not contain detectable levels of contaminants. The conclusion from the investigation was that the source of contamination for the western plume was up-gradient of the Gradall facility and the contaminants were migrating with the natural ground water flow under the Gradall property.

2000
Ohio EPA installed Geoprobe® borings along Mill Avenue directly north of the Gradall facility, and along the edge of the city well field directly east of Gradall. Three discrete ground water samples were collected from each of the nine borings and submitted for laboratory analysis for VOCs. Results of the investigation indicated that one of the highest concentrations of ground water VOCs (specifically, PCE at 494 µg/L) was found at boring GP-5A, located

SECTION VI - Previous Site Work

north (and upgradient) of the Gradall facility along Mill Avenue. PCE was also detected in five additional borings. The data indicated that the contamination present in ground water beneath the Gradall property was migrating from a source, or sources, up-gradient of Gradall.

Results from this 2000 investigation suggested a possible link between the western plume of contamination at the New Philadelphia Well Field and the former Puritan site. The Puritan site is located at the corner of Mill Avenue and Bank Lane, approximately 1,800 feet northwest and up-gradient of the city well field.

2001
Ohio EPA contracted the drilling of 18 cone penetrometer and 7 direct-push borings to perform additional in-situ ground water sampling. Twelve borings were located on the eastern end of the Gradall property and at the city well field. Seven of the borings were located on or near the Puritan property. Ground water results provided additional data defining the horizontal and vertical extent of the PCE plume. Samples collected north and west of the Puritan property had no PCE detections. A shallow ground water sample collected on the Puritan property contained 434 ug/L of PCE. Three shallow soil samples collected on the Puritan property found PCE concentrations as high as 214 µg/kg. Ground water samples collected from multiple depths in each boring or cone penetrometer indicate that the highest levels of ground water contamination at the Puritan property are found near the water table. As the contaminants migrate with ground water to the southeast, higher contaminant levels are found at intermediate depths, approximately 15-20 feet below the water table.

Data generated during this investigation provided further indication that the Puritan property was the source of the western plume. The data from this investigation is included in the Preliminary Assessment Report for Puritan Laundry (Table 1 and Figures 5, 6, and 7).

2014
Ohio EPA sampled ground water from 7 piezometers located along the western border of the city of New Philadelphia's well field property, approximately 400 feet west of the city's public water wells and directly to the east of the Gradall industrial property. Results of this monitoring demonstrated that PCE concentrations ranged as high as 132 µg/L in the upper ground water zone (20 foot depth) and as high as 66.5 µg/L in a lower ground water zone (40 foot depth).

The figure included as Attachment A depicts the cumulative results of the 2000, 2001, and 2014 ground water sampling events, with an approximation of the boundary of the PCE plume as it is believed to exist between the Puritan property and the New Philadelphia wellfield.

2015
An October 19, 2015 phone interview with Ed Wilson, Water Superintendent – City of New Philadelphia verified that, although concentrations in the raw water supply have decreased since they were first detected in the 1980s, PCE is still detected as a contaminant within the city's raw water supply and is removed through the treatment plants' air stripper system prior to distribution. It is also noteworthy that the 2015 Annual Report for the Joy Technologies site presents a historical graph for PCE at city well No. 4, and shows that the concentration of PCE in well No. 4 has steadily increased from approximately 2 µg/L in 2002 to just below the MCL of 5 µg/L in 2015.

SECTION VII - Site Geology and Hydrogeology

The subsurface geologic materials in the vicinity of the former Puritan site consist of a thick unit of unconsolidated sand and gravel deposits of the Tuscarawas River buried valley aquifer. The unit is capped by finer textured deposits of silt, fine sand, and trace amounts of clay. The finer-grained deposits typically transition to the coarser

SECTION VII - Site Geology and Hydrogeology

sand and gravel at depths between 10 and 20 feet below ground surface. Under the nearby Joy Technologies facility, the cumulative thickness of the unconsolidated deposits was measured at approximately 200 feet based on the installation of deep monitoring wells. At the Puritan property, which is located on a terrace 15-20 feet higher in elevation than the New Philadelphia well field, ground water occurs at depths of approximately 30 feet below ground surface. The depth to water becomes shallower in the direction of the well field, where it is approximately 15 feet below ground surface.

Pumping tests completed at the New Philadelphia well field in 1987 indicated very high values of hydraulic conductivity (K) for the aquifer, on the order of 1.38×10^{-1} cm/sec. The ground water flow velocities below the Joy facility have been calculated to be on the order of 850 feet/year.

The bedrock that lies beneath the thick alluvial aquifer consists of shales, sandstones, conglomerates, claystones, coals, iron ores, and limestone of the Pennsylvanian-aged Allegheny and Pottsville formations.

SECTION VIII - Sample Summary

Media	Field Samples #	Duplicate #	Background #	Trip Blanks #	Total #
Groundwater	11	2	2	1	16
Drinking water	4	1	--		5
Soil	10	2	2	--	14

SECTION IX - Sampling Strategy

The previous field work performed in 2000-2001 by Ohio EPA and its contractors provided a thorough delineation of the nature and extent of the PCE plume as it existed between the Puritan property and the New Philadelphia wellfield. Accordingly, the proposed investigation is focused primarily on gathering data on the Puritan property, to determine if there is a distinct source of contamination existing on-site.

A total of 7 locations on the Puritan property are proposed for Geoprobe® borings. The specific locations were chosen based on Ohio EPA's limited knowledge of the former dry cleaning facility, the use of historic aerial photos and Sanborn maps (Attachment B) to identify the former operations area, and the use of the previous ground water sampling results to identify likely source areas. At 5 of the 7 locations, continuous soil cores will be collected from the surface to a depth of 12 feet. This depth should be sufficient to detect VOC-impacted soil, if it exists. At each boring a ground water sample will be collected from approximately 5 feet below the water table, which is expected to be encountered at approximately 25-30 feet below ground surface. At the remaining 2 locations, only ground water samples will be collected. Historical data showed that the shallow ground water zone at the site contained higher VOC concentrations. Shallow soil samples from 0-2 feet below ground surface will also be collected for VOC analysis from each of the 5 Geoprobe® borings where soil is collected.

A total of 4 additional off-site, down-gradient, Geoprobe® borings are proposed to collect ground water samples at select locations identified during previous investigations that appear to represent the centerline of the PCE plume. Ground water will be collected from a zone approximately 15 to 20 feet below the water table, based on historical data showing that VOC concentrations are higher within this zone.

Two additional off-site Geoprobe® borings are proposed to collect ground water samples up-gradient from the Puritan property. Also, background soil samples will be collected from one of these borings.

A raw water sample will be collected from each of the four (4) New Philadelphia drinking water production wells, so that any VOC concentrations detected in the raw water can be compared with contemporaneous samples of ground water at the locations described above.

Samples collected during the course of this investigation will be submitted to the Contract Laboratory Program (CLP) for volatiles analysis using Method 8260C for ground water and Method 5035/5035A for soil.

The sample locations can be found on Figures 3 and 4.

Matrix: Soil

Soil cores will be collected at 5 on-site Geoprobe® borings, and 2 up-gradient Geoprobe® borings. Continuous soil cores will be collected from the surface to a depth of 12 feet. Immediately upon opening the acetate liner that contains each soil core, a PID will be used to screen the core for VOCs. If a discrete zone with elevated PID readings is identified, then a sample from that zone will be collected using Ohio EPA DERR FSOP 2.1.7 for Method 5035/5035A analysis for VOCs. If more than one zone per boring displays elevated PID readings, then a sample from the zone with the highest PID reading will be submitted for analysis. A sample from the 0-2 foot interval will also be collected from each boring for VOC analysis. A background soil sample will be collected from 0-2 feet below ground surface, as well as at a depth corresponding to deeper on-site soil samples, if they are collected.

Matrix: Ground Water

Ground water samples will be collected from 13 Geoprobe® borings. Seven of these locations are located on the Puritan property, two locations are located up-gradient of the property, and four locations are located downgradient between the Puritan property and the New Philadelphia wellfield. Ground water samples will be collected from a Geoprobe® screen-point sampler with disposable screens installed at the target depth. These samples will be

SECTION IX - Sampling Strategy

sent to a CLP lab and analyzed for low level Volatile Organic Compounds. The sampling method will be the polyethylene tubing/check ball method in accordance with Ohio EPA DERR SOP 2.2.4.

Matrix: Drinking Water

A sample of raw drinking water will be collected from each of the four New Philadelphia drinking water production wells. The samples will be collected from sample ports located at each wellhead, ensuring that each well has been operating for a minimum of 15 minutes prior to sample collection. These samples will be sent to a CLP lab analyzed for Trace Volatile Organic Compounds.

Procedures:

Personal protective procedures, sample collection, sample screening and field decontamination will all be performed according to Ohio EPA-DERR's *Field Standard Operating Procedures*, January 2007 or as amended via DERR's 2009 – 2015 FSOP revisions. The Quality Assurance Project Plan (QAPP) for Superfund Site Investigation Activities conducted by the Ohio Environmental Protection Agency (June 25, 2010) will also be followed.

SECTION X - Investigation-Derived Waste Plan

If, in the best professional judgment of the site coordinator, investigation-derived wastes are non-hazardous, the wastes will be double-bagged and deposited in an industrial dumpster on site or transported back to the Ohio EPA Field Facility in Columbus, Ohio for disposal as directed in the U.S. EPA Guide to Management of Investigation-Derived Wastes, Publication: 9345.3-03FS, January 1992.

Investigation-derived wastes will generally consist of disposable vinyl and nitrile gloves, latex boot covers, and detergent water. These items are used primarily for prevention of cross-contamination and for sanitary considerations during sampling activities.

Should contact with concentrated wastes occur, disposable gear and waste water will be secured in a steel drum, on site if possible, until sample analysis results are received. If analytical data reveals significant contamination, as determined by the site coordinator, these wastes will be disposed of properly by a contracted, licensed hauling and disposal facility.

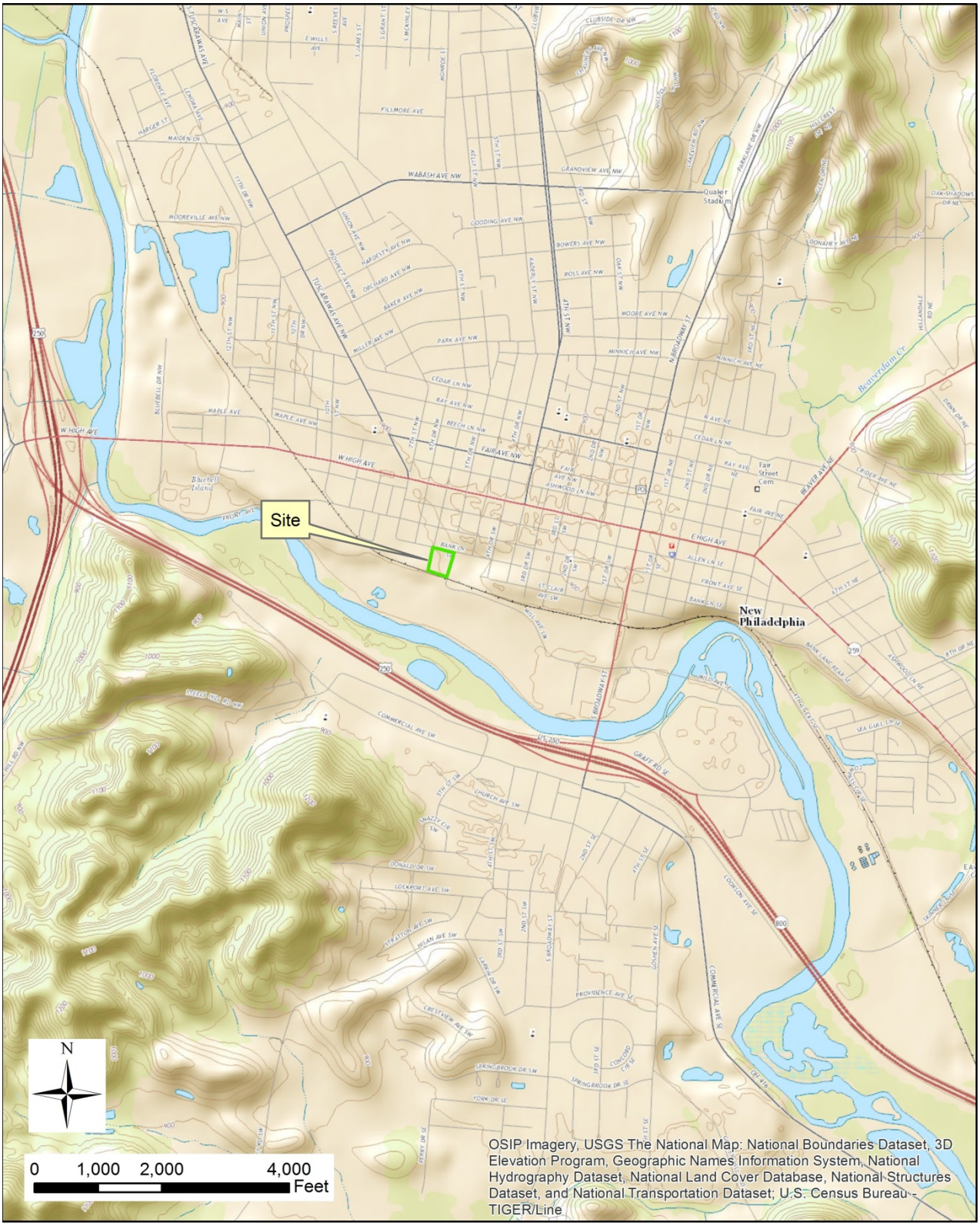

Figure 1. Site Location Map

Figure 2. Current Site Conditions

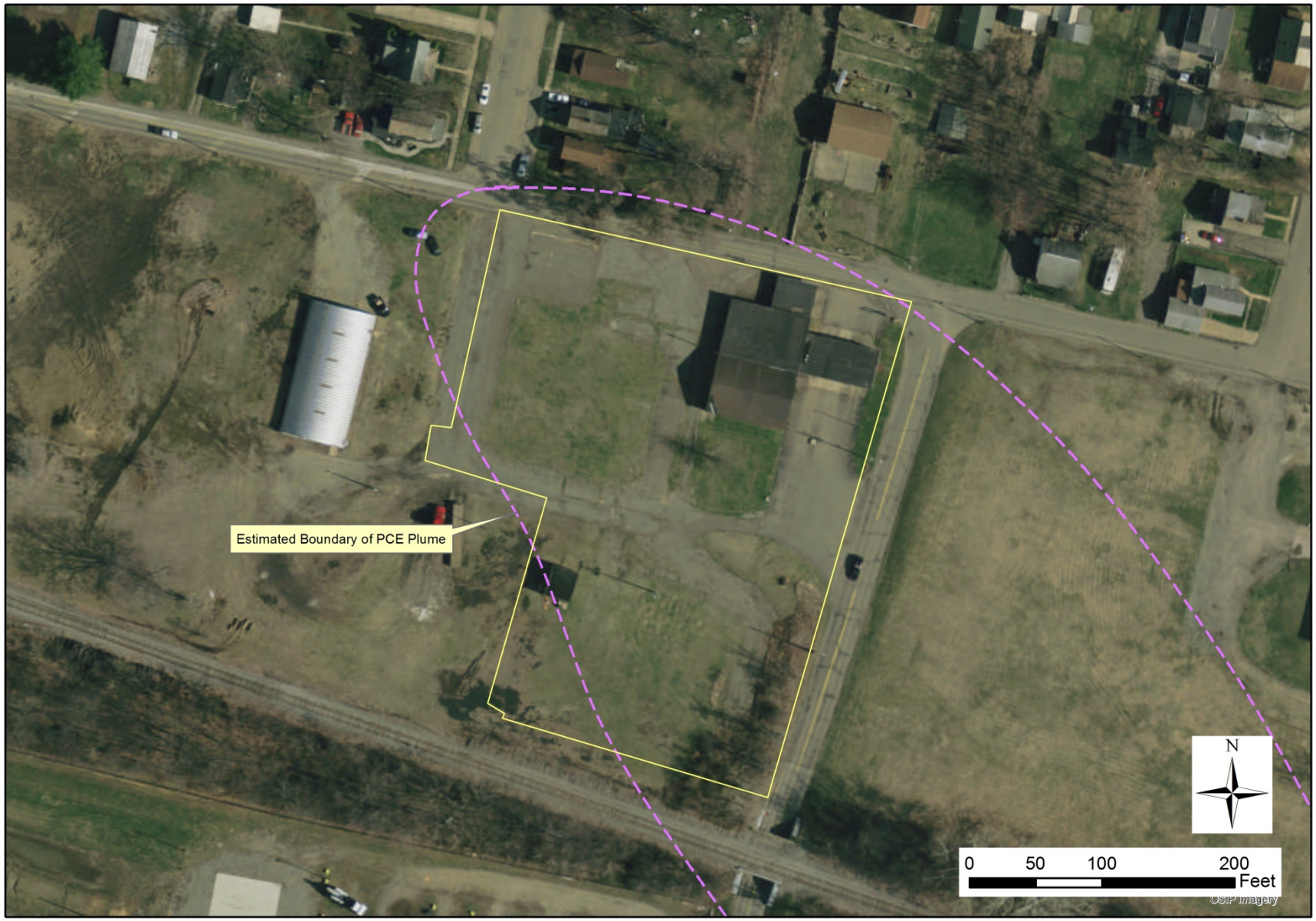

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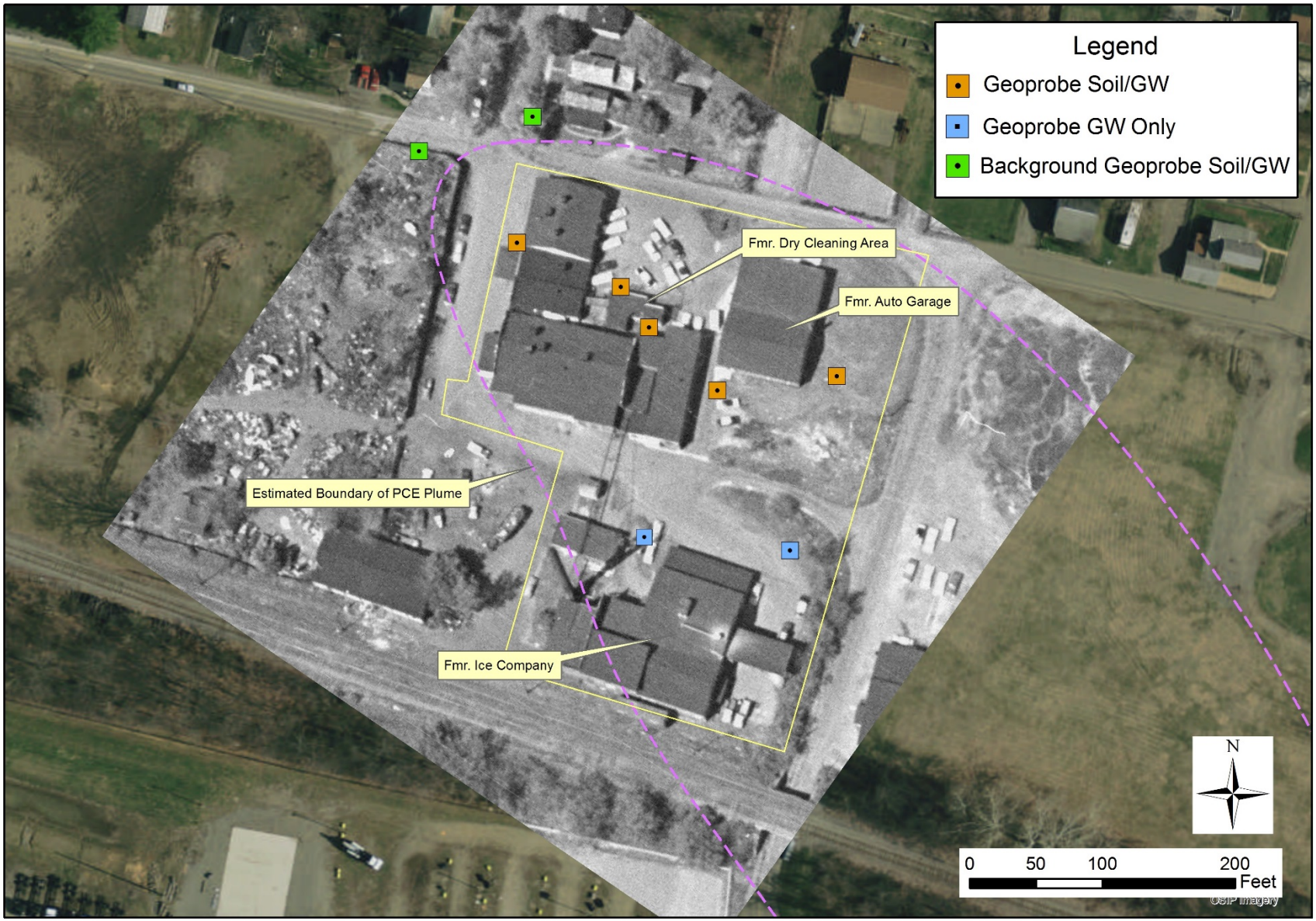
Figure 3. Proposed Onsite Sampling Locations (1960 Air Photo Overlay)



Note: Building use identification derived from Sanborn map (Attachment B)

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Figure 4. Proposed Off-Site Plume Delineation Sample Locations

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Attachment A

Historic Data and estimated extent of PCE plume

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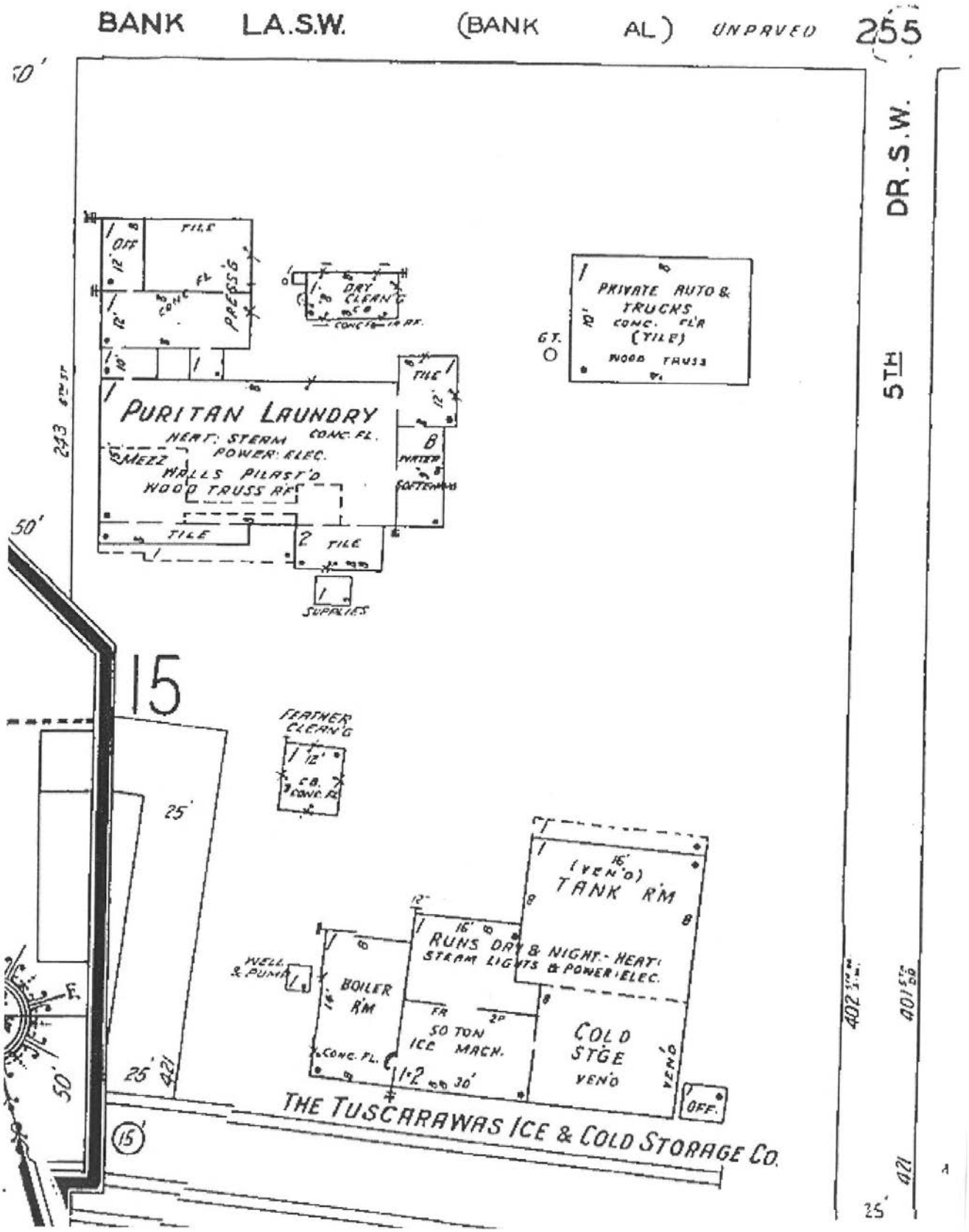
Attachment B



Sanborn figure of former Puritan Laundry operations

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Attachment C

Site Health and Safety Plan

Division of Environmental Response and Revitalization

Site Name: Puritan Laundry			
Section 1: General Site and Project Information			
Address 243 6th St. SW	City New Philadelphia	State OH	Zip Code 44663 —
County Tuscarawas		District SEDO	
Preclaims No. 479001337004		U.S. EPA I.D. No. OHN000506120	
Current Land Use Commercial		Current Site Status Closed or Vacant	
Regulatory Status Not Regulated		Program Remedial Response	

Scope of site assessment activities to be performed (please describe)
The purpose of this Site Inspection is to determine whether an on-site source of PCE leaching to ground water exists on the Puritan site. Soil, ground water and drinking water will be sampled.

Anticipated dates of field investigation activities: Starting: 07 / 18 / 2016 Ending: 07 / 21 / 2016

HASP prepared by: Osborne/O'Hara | Date HASP Finalized: 06 / 01 / 2016

Is there an existing HASP for facility activities? ☐ Yes ☒ No ☐ Don't Know

Section 2: Site Wastes, Waste Characteristics and Impacted Environmental Media

Solid wastes known or suspected to be present:

- ☐ Construction or Demolition Debris
- ☐ Municipal Solid Waste
- ☐ Non-Hazardous Industrial Waste
- ☐ Hazardous Waste
- ☒ Other Solid Wastes (please describe)

Soil contaminated with PCE

Liquid wastes known or suspected to be present:

- ☐ Landfill Leachate
- ☐ Wastewater or Sludge
- ☐ Chlorinated Solvents
- ☐ Petroleum or Petroleum Products
- ☒ Other Liquid Wastes (please describe)

Ground Water contaminated with PCE and its breakdown products

Characteristics of known or suspected wastes:

☐ Toxic	☐ Flammable	☐ Corrosive	☐ Reactive
☒ Volatile	☐ Explosive	☐ Inert	☐ Unknown

☐ Other characteristics (please describe)

Environmental media known or suspected to be contaminated by waste or hazardous substances:

☒ Soil or Soil Fill	☒ Ground Water	☒ Indoor Air	☒ Soil Gas
☐ Sediment	☐ Surface Water	☐ Outdoor Air	

Site Name: Puritan Laundry

Section 3: Employee Health and Safety Training

All Ohio EPA field staff working at this site meet applicable 29 CFR 1910.120(e) training requirements, including the initial 40-hour HAZWOPER training, three days of supervised on-the-job health and safety training, annual 8-hour refresher training and for field supervisors, 8-hour supervisor training. In addition, all Ohio EPA field staff are trained to administer first aid and CPR. Health and safety training documentation is maintained by and available from the Ohio EPA Field Safety and Health Coordinator.

Section 4: Medical Screening and Respiratory Protection

All Ohio EPA field staff working at this site are enrolled in a comprehensive medical screening program which includes initial and annual medical examinations, an employment-termination examination, and maintenance of associated medical records. In addition, field staff who use respirators are enrolled in a respiratory protection program that includes annual training, fit-testing and medical screening.

Section 5: Field Team Members and Acknowledgement of HASP Review
(If additional acknowledgement lines are required, please use the back of this page. Include printed name, signature and date.)

Health & Safety Officer Bill Batin/Kevin O'hara	Signature and Date / /
SIFU Field Team Leader Bill Batin	Signature and Date / /
DERR TBA Coordinator	Signature and Date / /
DERR Site Coordinator Kevin O'Hara	Signature and Date / /
Field Team Member Karl Reinbold	Signature and Date / /
Field Team Member Gavin Armstrong	Signature and Date / /
Field Team Member Tori Sigler	Signature and Date / /
Field Team Member Wendy Vorwerk	Signature and Date / /
Field Team Member	Signature and Date / /
Field Team Member	Signature and Date / /
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Field Team Member	Signature and Date / /
Field Team Member	Signature and Date / /
Field Team Member	Signature and Date / /

Site Name: Puritan Laundry

Section 6: Standard Safe Work Practices and Site Control Measures

Before departing for field work, ensure that a HASP and first aid kit are included in every Ohio EPA field vehicle.

Obey posted speed limits and drive defensively when travelling to and from the site and on-site.

Use the "buddy system" during all field work activities, with a minimum of two field staff working as a team and maintaining contact.

Use cellular phones to communicate during field work activities. (All field staff must have access to cellular phones.)

Dress appropriately for anticipated weather conditions and drink plenty of fluids when working in hot weather.

Wear protective footwear (safety boots) at all times while working on site.

Wear chemical protective (e.g., nitrile) gloves when sampling or handling contaminated media or decontaminating sampling equipment.

Wear protective (e.g., leather) gloves when operating mechanical equipment.

Wear safety glasses, goggles or a face shield when performing tasks that present the potential for eye injury due to projectiles (e.g., drilling) or splashing fluids (e.g., equipment decontamination).

Wear hearing protection when working around the Geoprobe or other equipment that exceeds 85 decibels (equal to or greater than the sound of a running lawn mower).

Wear a hard hat when working in or near areas with the potential for falling objects or other conditions that could cause head injuries.

When working in or near areas with traffic, use appropriate traffic control measures, wear brightly colored safety vests and be cautious of moving vehicles.

Establish work zones around the Geoprobe or other sampling equipment to control sampling activities.

Avoid unnecessary contact with contaminated materials or surfaces.

Do not eat, chew gum or use tobacco products on site.

Never enter an OSHA-defined confined space for any reason. Only Ohio EPA Office of Special Investigation (OSI) staff or other appropriately trained staff are qualified to enter confined spaces for reconnaissance or sampling activities, and will perform such work in accordance with Ohio EPA's Confined Space Entry Policy (OEPASM-10-002).

Cease work activities and take cover during thunderstorms to avoid being struck by lightning.

If the site conditions encountered require a greater degree of protection than provided by the work-plan specified personal protective equipment (PPE), leave immediately and do not re-enter the site until appropriate PPE is available.

If radioactivity exceeding the Ohio Department of Health (ODH) dose limit of 2 mrem/hour (0.02 mSv/hour) for the general public is detected, leave the site immediately and contact ODH.

Site Name: Puritan Laundry

Section 7: Site-Specific Hazard Evaluation

Table 1 — Chemical Hazards Present or Anticipated at Site

(Please refer to Table 2 for Air Monitoring Equipment, Action Levels and Responses)

Chemical Name and Group (e.g., Benzene, VOC)	Highest Observed Concentration (ppm) and Media Impacted	OSHA PEL (TWA)	ACGIH TLV (TWA)	NIOSH IDLH	Carcinogen?	NIOSH or ICSC Data Card Attached?
Tetrachloroethylene	0.638 - ground water	100 ppm	25 ppm	150 ppm	☒ Yes ☐ No	☒ Yes ☐ No
Trichloroethylene		100 ppm	50 ppm	1000 ppm	☒ Yes ☐ No	☒ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes ☐ No	☐ Yes ☐ No

Contaminated Media and Potential Routes of Chemical Exposure Based on Work Activities

Contaminated Media	Inhalation	Absorption	Ingestion	Injection
☒ Soil or Soil Fill	☒	☒	☐	☐
☐ Sediment	☐	☐	☐	☐
☒ Ground Water	☐	☒	☒	☐
☐ Surface Water	☐	☐	☐	☐
☐ Indoor Air	☐	☐	☐	☐
☒ Soil Gas	☒	☐	☐	☐

Area asbestos-containing materials present in site structures?	☐ Yes ☒ No ☐ Don't Know
Oxygen deficient (<19.5%) or enriched (>23.5%) conditions?	☐ Yes ☒ No ☐ Don't Know

Site Name: Puritan Laundry

Section 7: Site-Specific Hazard Evaluation (continued)

Physical Hazards Present or Anticipated at Site Based on Work Activities

- ☒ Slip, Trip or Fall
- ☒ Lifting
- ☒ Vehicle Traffic
- ☒ Weather and Temperature Stress
- ☒ Noise
- ☒ Active or Abandoned Utilities
- ☐ Structural Hazards (buildings or other structures)
- ☐ Mechanical Hazards
- ☐ Electrical Hazards
- ☐ Water Hazards
- ☐ Flammable or Explosive Materials or Substances
- ☐ Dusty Atmospheres
- ☐ Explosive Atmospheres
- ☐ High Pressure (for example, compressed gas cylinders)
- ☐ Other physical hazards (please describe)

Biological Hazards Present or Anticipated at Site Based on Work Activities

- ☒ Poison Plants (for example, poison ivy)
- ☐ Heavy Brush or Thorned Plants
- ☐ Hornets, Wasps or Bees
- ☒ Mosquitoes
- ☒ Ticks
- ☐ Snakes
- ☐ Other biological hazards (please describe)

Radioactive Hazards Present or Anticipated at Site Based on Work Activities (please describe)
None

Additional Information Regarding Site Hazards Based on Work Activities (please describe)

Site Name: Puritan Laundry

Section 8: Health and Safety Air Monitoring

Air monitoring will be conducted when performing site assessment activities that involve drilling or excavating, and may be performed during other types of activities depending on the hazards encountered at the site. All air monitoring equipment is maintained and calibrated per manufacturer's recommendations. Background monitoring conditions will be established prior to the start of assessment activities.

Table 2 — Air Monitoring Equipment Needed with Action Levels and Responses
(Based on Site-Specific Hazard Evaluation)

Atmospheric Hazard	Monitoring Equipment	Action Level(s) and Response(s)
☐ Explosive Atmosphere	Lower Explosive Level Meter (or Combustible Gas Indicator)	< 10% LEL: Continue monitoring 10-25% LEL outdoors: Continue monitoring 10-25% LEL inside structure: Leave, explosion hazard >25% LEL: Leave site, explosion hazard
☐ Oxygen-Deficient Atmosphere	Oxygen Meter	< 19.5% Oxygen: Leave site, toxic or explosive gas or vapors may be displacing oxygen, LEL readings are invalid
☐ Oxygen-Enriched Atmosphere	Oxygen Meter	> 23.5% Oxygen: Leave site, a chemical reaction may be generating oxygen, LEL readings are invalid
☒ Volatile Organic Compounds	Photoionization Detector (PID) or Flame Ionization Detector (FID)	1 ppmv > breathing zone background: Leave site and obtain appropriate PPE to continue work upon reentry
☐ Hydrogen Sulfide	Hydrogen Sulfide Meter	10 ppmv: Leave site
☐ Carbon Monoxide	Carbon Monoxide Meter	35 ppmv: Leave site
☐ Ionizing Radiation	Gamma Radiation Survey Meter or Dosimeter	< 2 mrem/hr: Continue monitoring > or = 2 mrem/hr: Leave site and notify ODH
☐ Particulate Matter (Dust)	Monitoring Instrument (please describe)	Action Level(s) and Response(s) (please describe; consult NIOSH Pocket Guide to Chemical Hazards)
☐ Other (please describe)	Monitoring Instrument(s) (please describe)	Action Level(s) and Response(s) (please describe; consult NIOSH Pocket Guide to Chemical Hazards)

Site Name: Puritan Laundry

Section 9: Personal Protective Equipment, Site-Specific Work Practices and Additional Site Control Measures Based on Site Hazard Evaluation

Personal Protective Equipment

☒ Level D: Safety boots, chemical-resistant gloves, protective eye wear, hearing protection (if needed), hard hat (if needed) and coveralls (if needed)

☐ Level C: Chemical-resistant coveralls (NFPA 1993) with a full-face air-purifying canister equipped respirator, chemical-resistant gloves, safety boots, protective eye wear, two-way communications system, hearing protection (if needed) and a hard hat (if needed); NOTE - specific contaminant concentration(s) must be known for Level C PPE; otherwise, use Level B PPE for situations where contaminant concentrations are unknown.

☐ Level B: Splash protective/chemical resistant suit (NFPA 1992) with a pressure-demand full-face SCBA, inner and outer chemical-resistant gloves, chemical-resistant safety boots, two-way communications system, hearing protection (if needed) and a hard hat (if needed)

Ohio EPA has a comprehensive PPE program which is documented by policy OEPA-SM-06-004, Personal Protective Equipment. Decisions to upgrade to a higher level of PPE will be based on air monitoring results as presented in Table 2 or other site conditions or circumstances encountered in the field.

Site-Specific Work Practices and Control Measures (please describe)
All staff and observers must wear hearing protection while Geoprobe is operating.

Avoid direct contract with soil, fill materials or ground water during drilling or sampling.

Wear nitrile or other protective gloves that are compatible with the expected chemical hazards (PCE, TCE and associated chlorinated VOCs) when logging, sampling, decontaminat equipment or handling purge water and decontamination fluids.

Establish organized work zones at sampling location to help prevent slip/trip/fall accidents, equipment-related accidents, or accidentail contact with ground water or decontamiantion fluids.

Section 10: Spill Containment Program

If a spill or release of a hazardous substance occurs at the site, call the Ohio EPA Spill Hotline (800-282-9378) for immediate assistance.

Section 11: Decontamination Program

Disposable PPE used during site work activities will be contained and disposed of as investigation-derived waste (IDW) per the site-specific work plan. Sampling equipment used during site work activities will be washed in a solution of tap water and non-phosphate detergent, rinsed once with tap water and rinsed a second time using deionized or distilled water in accordance with DERR FSOP 1.6, Sampling Equipment Decontamination. Decontamination fluids will be contained and disposed of as investigation-derived waste (IDW) per the site-specific work plan.

Site Name: Puritan Laundry

Section 12: Emergency Response Plan

Emergency Evacuation

The Ohio EPA field team leader will notify other field staff in the event of an emergency. Three vehicle horn blasts or cell phone or radio communication will be used to signal an emergency evacuation. Ohio EPA staff will immediately proceed to their vehicles and meet outside the main entrance to the site for additional instructions. If the site or facility has a written emergency response plan, Ohio EPA staff will follow all applicable requirements.

Emergency Contact Information

Is 911 service available? ☒ Yes ☐ No

Local Police	122 2nd St. SE, New Philadelphia	Phone	(330) 343 — 4488
Sheriff	2295 Reiser Ave. SE, New Philadelphia, OH 44663	Phone	(330) 339 — 7743
Fire Department	108 2nd St SE, New Philadelphia	Phone	(330) 343 — 4432
Poison Control Center Phone	( ) —	Ohio EPA Spill Hotline	( ) —

Urgent Care Information

Urgent Care	First Care			Phone	(330) 343 — 0753
Address	340 Oxford St. # 110	City	New Philadelphia	Zip	44663 —

Hospital Information

Hospital	Union Hospital			Phone	(330) 343 — 3311
Address	659 Boulevard St.	City	Dover	Zip	44622 —

Please attach driving directions from the site to the hospital to this HASP

Site Name: Puritan Laundary

ATTACHMENT 1
NIOSH Pocket Guide to Chemical Hazards Data Sheets

Tetrachloroethylene

Synonyms & Trade Names Perchlorethylene, Perchloroethylene, Perk, Tetrachlorethylene

CAS No. 127-18-4	**RTECS No.** KX3850000 (/niosh-rtecs/KX3ABF10.html)	**DOT ID & Guide** 1897 160 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx/guide160/) (http://www.cdc.gov/Other/disclaimer.html)
Formula $Cl_2C=CCl_2$	**Conversion** 1 ppm = 6.78 mg/m3	**IDLH** Ca [150 ppm] See: 127184 (/niosh/idlh/127184.html)
Exposure Limits **NIOSH REL** : Ca Minimize workplace exposure concentrations. See Appendix A (nengapdxa.html) **OSHA PEL** † (nengapdxg.html) : TWA 100 ppm C 200 ppm (for 5 minutes in any 3-hour period), with a maximum peak of 300 ppm		**Measurement Methods** **NIOSH** 1003 (/niosh/docs/2003-154/pdfs/1003.pdf) ; **OSHA** 1001 (http://www.osha.gov/dts/sltc/methods/mdt/mdt1001/1001.html) (http://www.cdc.gov/Other/disclaimer.html) See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html) (http://www.cdc.gov/Other/disclaimer.html)

Physical Description Colorless liquid with a mild, chloroform-like odor.

MW:	BP:	FRZ:	Sol:	VP:	IP:
165.8	250°F	-2°F	0.02%	14 mmHg	9.32 eV

Sp.Gr:	Fl.P:	UEL:	LEL:		
1.62	NA	NA	NA		

Noncombustible Liquid, but decomposes in a fire to hydrogen chloride and phosgene.

Incompatibilities & Reactivities Strong oxidizers; chemically-active metals such as lithium, beryllium & barium; caustic soda; sodium hydroxide; potash

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]

Target Organs Eyes, skin, respiratory system, liver, kidneys, central nervous system

Cancer Site [in animals: liver tumors]

Personal Protection/Sanitation (See protection codes (protect.html))
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contaminated
Remove: When wet or contaminated
Change: No recommendation
Provide: Eyewash, Quick drench

First Aid (See procedures (firstaid.html))
Eye: Irrigate immediately
Skin: Soap wash promptly
Breathing: Respiratory support
Swallow: Medical attention immediately

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0076 (/niosh/ipcsneng/neng0076.html) See MEDICAL TESTS: 0179 (/niosh/docs/2005-110/nmed0179.html)

Page last reviewed: April 4, 2011
Page last updated: February 13, 2015
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Road Atlanta, GA 30329-4027, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348 - Contact CDC–INFO

Trichloroethylene

Synonyms & Trade Names Ethylene trichloride, TCE, Trichloroethene, Trilene

CAS No. 79-01-6	**RTECS No.** KX4550000 (/niosh-rtecs/KX456D70.html)	**DOT ID & Guide** 1710 160 (http://wwwapps.tc.gc.ca/saf-sec-sur/3/erg-gmu/erg/guidepage.aspx/guide160/) (http://www.cdc.gov/Other/disclaimer.html)
Formula $ClCH=CCl_2$	**Conversion** 1 ppm = 5.37 mg/m3	**IDLH** Ca [1000 ppm] See: 79016 (/niosh/idlh/79016.html)

Exposure Limits **NIOSH REL** : Ca See Appendix A (nengapdxa.html) See Appendix C (nengapdxc.html)
OSHA PEL † (nengapdxg.html) : TWA 100 ppm C 200 ppm 300 ppm (5-minute maximum peak in any 2 hours)

Measurement Methods
NIOSH 1022 (/niosh/docs/2003-154/pdfs/1022.pdf) , 3800 (/niosh/docs/2003-154/pdfs/3800.pdf) ;
OSHA 1001 (http://www.osha.gov/dts/sltc/methods/mdt/mdt1001/1001.html) (http://www.cdc.gov/Other/disclaimer.html)
See: NMAM (/niosh/docs/2003-154/) or OSHA Methods (http://www.osha.gov/dts/sltc/methods/index.html) (http://www.cdc.gov/Other/disclaimer.html)

Physical Description Colorless liquid (unless dyed blue) with a chloroform-like odor.

MW: 131.4	**BP:** 189°F	**FRZ:** -99°F	**Sol:** 0.1%	**VP:** 58 mmHg	**IP:** 9.45 eV
Sp.Gr: 1.46	**Fl.P:** ?	UEL(77°F): 10.5%	LEL(77°F): 8%		

Combustible Liquid, but burns with difficulty.

Incompatibilities & Reactivities Strong caustics & alkalis; chemically-active metals (such as barium, lithium, sodium, magnesium, titanium & beryllium)

Exposure Routes inhalation, skin absorption, ingestion, skin and/or eye contact

Symptoms irritation eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]

Target Organs Eyes, skin, respiratory system, heart, liver, kidneys, central nervous system

Cancer Site [in animals: liver & kidney cancer]

Personal Protection/Sanitation (See protection codes (protect.html)) **Skin:** Prevent skin contact	**First Aid** (See procedures (firstaid.html)) **Eye:** Irrigate immediately **Skin:** Soap wash promptly

Eyes: Prevent eye contact **Wash skin:** When contaminated **Remove:** When wet or contaminated **Change:** No recommendation **Provide:** Eyewash, Quick drench	**Breathing:** Respiratory support **Swallow:** Medical attention immediately

Respirator Recommendations

NIOSH

At concentrations above the NIOSH REL, or where there is no REL, at any detectable concentration:
(APF = 10,000) Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode
(APF = 10,000) Any supplied-air respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus

Escape:
(APF = 50) Any air-purifying, full-facepiece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister
Any appropriate escape-type, self-contained breathing apparatus

Important additional information about respirator selection (pgintrod.html#mustread)

See also: INTRODUCTION (/niosh/npg/pgintrod.html) See ICSC CARD: 0081 (/niosh/ipcsneng/neng0081.html)
See MEDICAL TESTS: 0236 (/niosh/docs/2005-110/nmed0236.html)

Page last reviewed: April 4, 2011
Page last updated: February 13, 2015
Content source: National Institute for Occupational Safety and Health (NIOSH) Education and Information Division

Centers for Disease Control and Prevention 1600 Clifton Road Atlanta, GA 30329-4027, USA
800-CDC-INFO (800-232-4636) TTY: (888) 232-6348 - Contact CDC–INFO

Site Name: Puritan Laundary

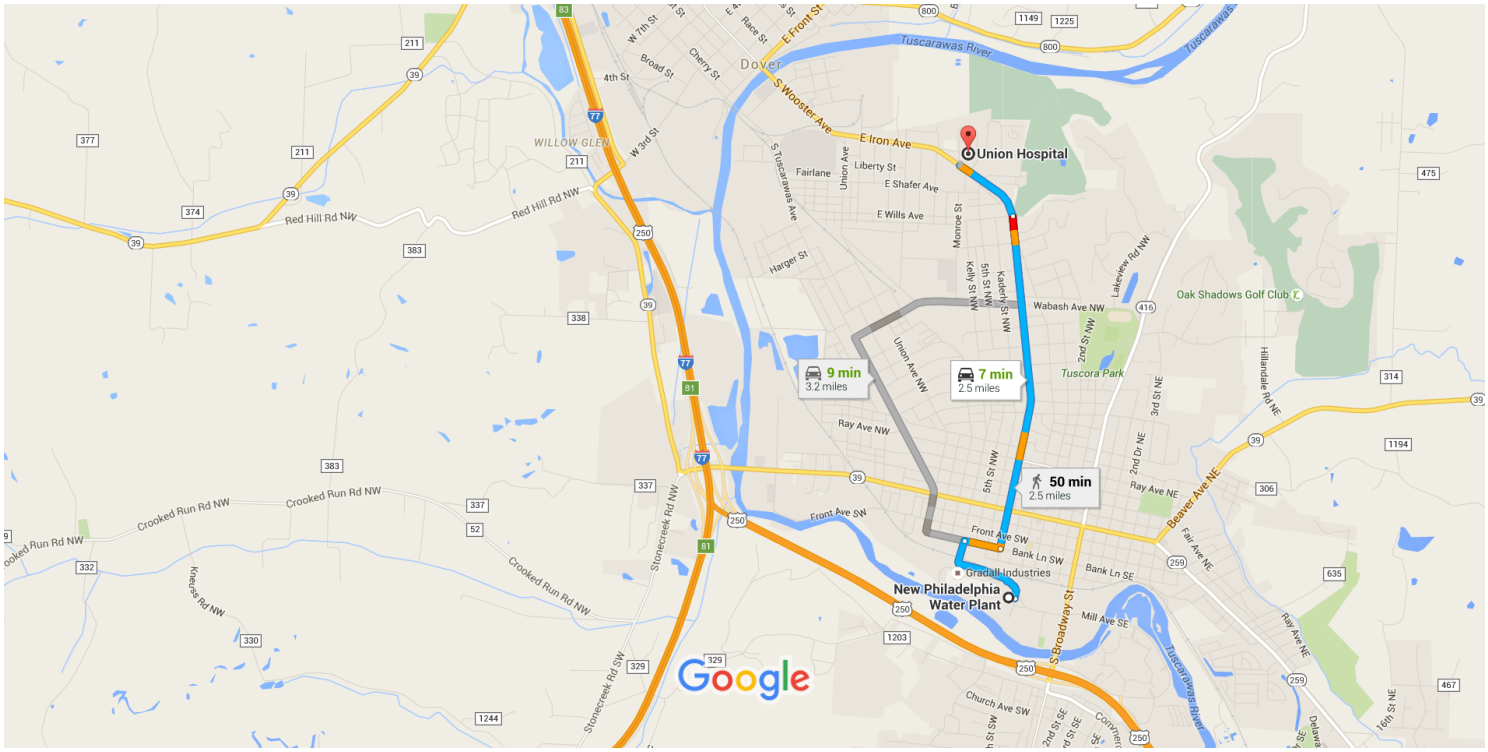
ATTACHMENT 2
Directions from Site to Hospital

Google Maps

New Philadelphia Water Plant to 659 Boulevard St, Dover, OH 44622

Drive 2.5 miles, 7 min

to Union Hosptial



Map data ©2016 Google 2000 ft

New Philadelphia Water Plant

310 Mill Avenue Southwest, New Philadelphia, OH 44663

1. Head north on Mill Ave SW toward Mill Ave SW
   ⚠ Partial restricted usage road

0.5 mi

2. Turn right onto Bank Ln SW

0.2 mi

3. Turn left onto 4th St SW

1.6 mi

4. Continue onto Boulevard St

0.3 mi

Union Hospital

659 Boulevard Street, Dover, OH 44622

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

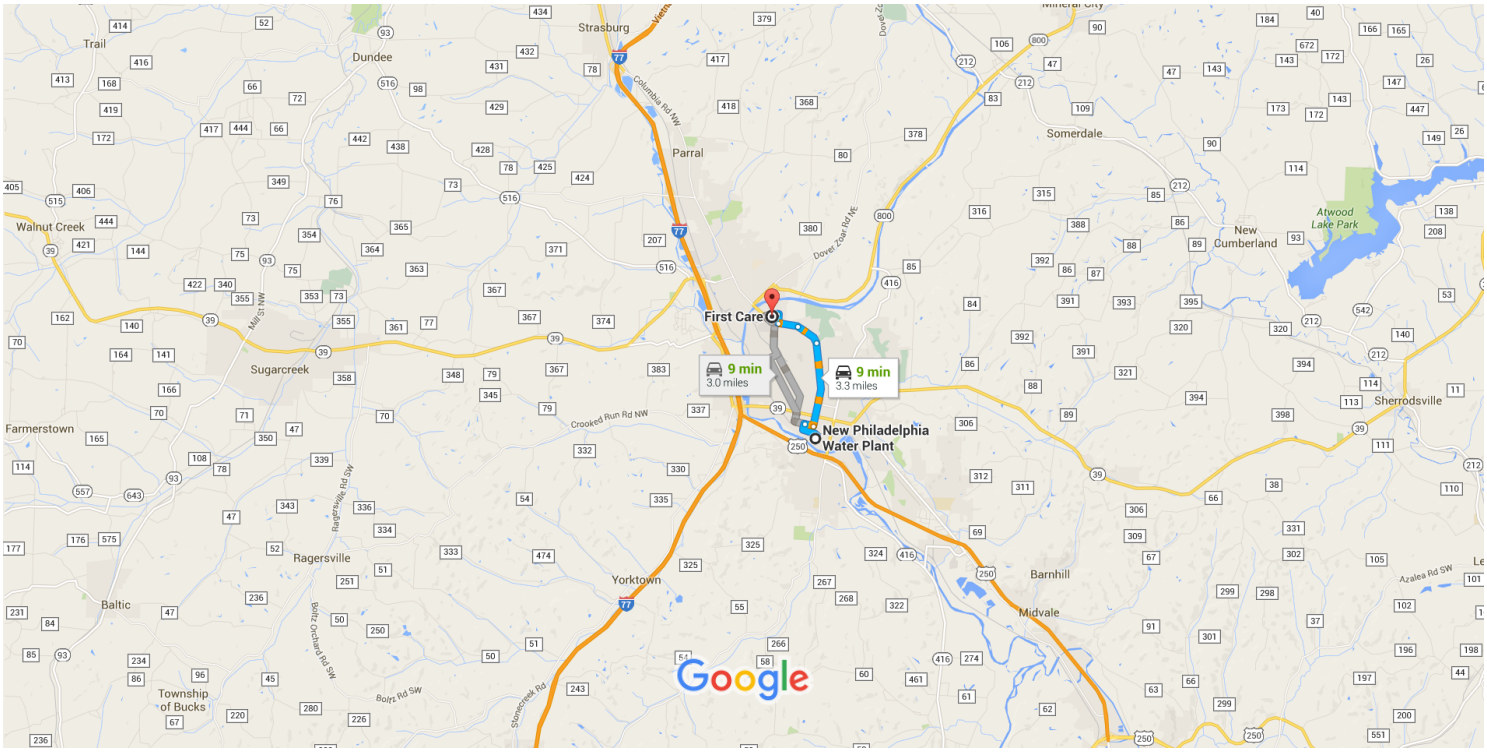
Google Maps

Google Maps

New Philadelphia Water Plant to 340 Oxford St # 110, Dover, OH 44622

Drive 3.3 miles, 9 min

to First Care - nearby Urgent Care (330) 343-0753



Map data ©2016 Google 2 mi

New Philadelphia Water Plant

310 Mill Avenue Southwest, New Philadelphia, OH 44663

1. Head north on Mill Ave SW toward Mill Ave SW
   ⚠ Partial restricted usage road

0.5 mi

2. Turn right onto Bank Ln SW

0.2 mi

3. Turn left onto 4th St SW

1.6 mi

4. Continue onto Boulevard St

0.5 mi

5. Continue onto E Iron Ave

0.4 mi

6. Turn right at Prospect St

0.2 mi

7. Continue onto Oxford St

0.1 mi

First Care

340 Oxford Street # 110, Dover, OH 44622